2ème méthode :

$$i = \frac{E - u_C}{R_1} = \frac{10 - 6,3}{500} = 7,4.10^{-3}\,A$$

11) Lorsque le condensateur est totalement chargé $u_C = E$

$$E_C = \frac{1}{2}.C.u_c^2 = \frac{1}{2}.2.10^{-6}.10^2 = \boxed{10^{-4}\,J}$$

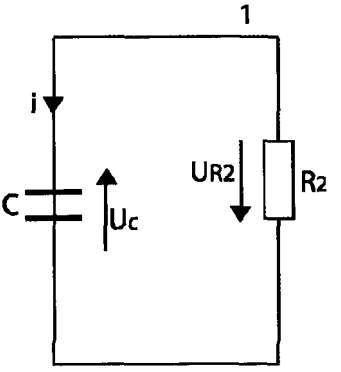
II.

1) D'après la loi des mailles

$$u_C + u_{R2} = 0 \Rightarrow u_C + R_2 i = 0$$

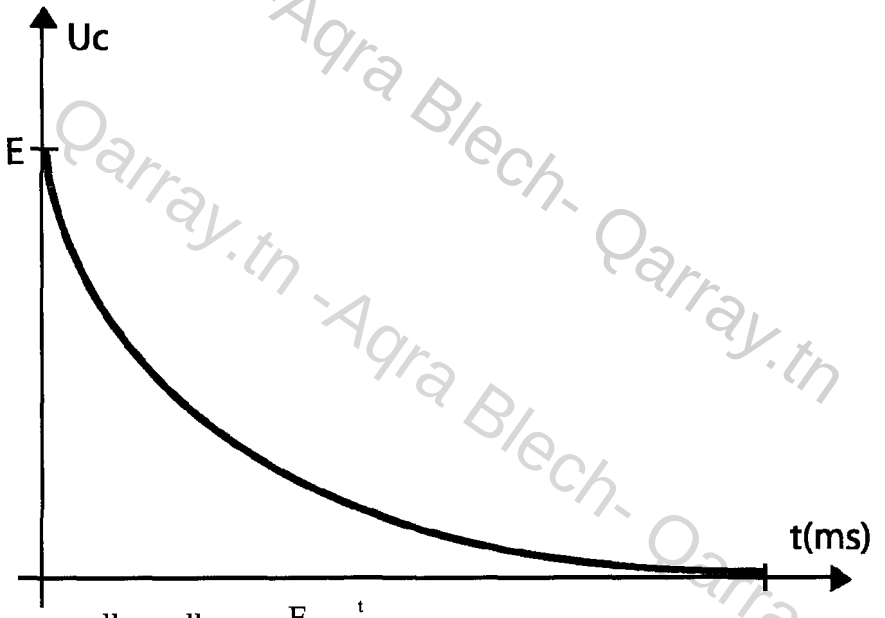
or $i = \frac{dq}{dt}$ et $q = C.u_C \Rightarrow i = c.\frac{du_C}{dt}$

$$\Rightarrow \boxed{u_C + R_2 C \frac{du_C}{dt} = 0}$$



2) La solution de l'équation différentielle est : $u_C = E.e^{-\frac{t}{\tau}}$ avec $\tau = R_2 C$

3)



4) $$i = \frac{u_R}{R_2} = \frac{-u_C}{R_2} = -\frac{E}{R_2} e^{-\frac{t}{\tau}}$$

Qarray.tn -Aqra Blech- Qarray.tn